

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
24 February 2005 (24.02.2005)

PCT

(10) International Publication Number  
**WO 2005/017159 A3**

(51) International Patent Classification<sup>7</sup>: **C12N 15/53**,  
15/11, 9/02, 9/04, 15/63, 1/21, C12P 17/04, 7/60

PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

(21) International Application Number:  
PCT/CH2004/000511

(84) Designated States (*unless otherwise indicated, for every  
kind of regional protection available*): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,  
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, ML, MR, NE, SN, TD, TG).

(22) International Filing Date: 16 August 2004 (16.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
03017677.0 14 August 2003 (14.08.2003) EP

**Declaration under Rule 4.17:**

— *as to the applicant's entitlement to claim the priority of the  
earlier application (Rule 4.17(iii)) for the following design-  
ations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW,  
BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ,  
EC, EE, EG, ES, FI, GB, GD, GE, GI, GM, GR, GU, ID,  
IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU,  
LV, MA, MD, MG, MK, MN, MW, MX, MY, NA, NI, NO, NZ,  
OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, SY,  
TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM,  
ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA,  
SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ,  
BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE,  
BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,  
IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent  
(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,  
SN, TD, TG)*

(71) Applicant (*for all designated States except US*): DSM IP  
ASSETS B.V. [NL/NL]; Het Overloon 1, NL-6411 TE  
Heerlen (NL).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): BERRY, Alan  
[US/US]; 5185 Duguid Road, Fayetteville, NY 13066  
(US). LEE, Connie [US/FR]; 1 Rue Chancel, F-68330  
Huningue (FR). MAYER, Anne, Françoise [LU/CH];  
Rennweg 100, CH-4052 Basel (CH). SHINJOH, Masako  
[JP/CH]; Rümelinbachweg 25, CH-4054 Basel (CH).

(74) Agents: SCHWANDER, Kuno, Josef et al.; DSM Nu-  
tritional Products Ltd., Wurmisweg 576, CH-4303 Kaiser-  
augst (CH).

**Published:**

— *with international search report*

(81) Designated States (*unless otherwise indicated, for every  
kind of national protection available*): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, GR, GU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,

(88) Date of publication of the international search report:  
3 November 2005

*For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.*

(54) Title: MICROBIAL PRODUCTION OF L-ASCORBIC ACID

(57) Abstract: The present invention discloses an isolated polynucleotide molecule derived from a polynucleotide encoding a polypeptide having L-sorbose dehydrogenase activity comprising a partial nucleotide sequence of at least 20 consecutive nucleotides of SEQ ID NO:1. The present invention further relates to a process for the production of L-ascorbic acid in high yield, in particular a process using resting cells of a microorganism able to convert given carbon sources into vitamin C. The thus obtained vitamin C may be further processed by purification and/or separation steps.

WO 2005/017159 A3